

**REMARKS**

Claims 1-9 and 11-21 are all the claims pending in the application. Claim 1 has been amended to incorporate claim 10, which has been canceled. In addition, claims 11 and 12 have been amended to depend from claim 1 in view of the cancellation of claim 10.

Entry of the above amendment is respectfully requested.

**I. Response to Non-statutory Obviousness-type Double Patenting Rejection**

Claims 1-4, 9-13 and 15-19 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as allegedly being unpatentable over claims 1-20 of co-pending Application No. 10/665,432. The Examiner's position is set forth on page 3 of the Office Action.

Applicant respectfully traverses this rejection. The claims of the co-pending application do not disclose or suggest a transparent base film containing an inorganic layered compound where the base film has a linear thermal expansion coefficient of 40 ppm/°C or lower, as recited in claim 1. Given that claim 1 of the co-pending application recites that the polymer composition comprises an organic modified layered silicate, the Examiner will appreciate that the subject matter of the present claims is not merely an obvious variant of the subject matter of claims 1-20 of co-pending Application No. 10/665,432.

In view of the above, withdrawal of the rejection is respectfully requested.

**II. Response to Rejection of claim 1 under 35 U.S.C. § 102(b)**

Claim 1 is rejected under 35 U.S.C. §102(b) as allegedly being anticipated by Volpe (US 5,510,147).

Without conceding the merits of the rejection and to advance prosecution, claim 1 has been amended to incorporate claim 10, which has not been included in this rejection. It is respectfully submitted that Volpe does not disclose a transparent base film containing an inorganic layered compound.

Thus, withdrawal of the rejection is respectfully requested.

**III. Response to Rejection of claims 1-19 under 35 U.S.C. § 102(b)**

Claims 1-9 are rejected under 35 U.S.C. §102(b) as allegedly being anticipated by Matsuo (US 5,645,923), as evidenced by Wiley (Wiley Database of Polymer Properties).

In addition, claims 10-15 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Matsuo, as evidenced by Wiley, and further in view of Pinnavaia (US 6,414,069).

Further, claims 16-19 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Matsuo, as evidenced by Wiley, and further in view of Stein (US 6,322,860).

Applicant respectfully traverses the rejection and submits that the cited references fail to disclose, teach or suggest the present invention.

The present invention is directed to a gas barrier film having an inorganic coating layer formed by the sol-gel method or an organic-inorganic hybrid coating layer formed by the sol-gel method on a transparent base film containing an inorganic layered compound wherein the

base film has a glass transition temperature of 100°C or higher and a linear thermal expansion coefficient of 40 ppm/°C or lower.

Pinnavaia discloses inorganic layered compounds, as noted by the Examiner. However, Pinnavaia merely mentions that their inorganic layered compounds are useful as several kinds of agents including a barrier film agent (*see* col. 10, line 40-45) and does not disclose a process for producing a barrier film. Pinnavaia does not disclose or suggest how to attain an excellent barrier property of a barrier film. In addition, the excellent gas barrier property of the present invention cannot be attained by simply incorporating an inorganic layered compound into the base film. *See* the Declaration submitted herewith.

Matsuo only disclose gas barrier films having a polyethylene terephthalate base film in the working examples. Matsuo is silent with respect to the use of inorganic layered compounds. If Pinnavaia were combined with Matsuo, the excellent gas barrier properties of the present invention cannot be attained by simply using a polyethylene terephthalate base film containing an inorganic layered compound. *See* the Declaration submitted herewith.

In support of the patentability of the present invention over the cited references, Applicant submits herewith an executed Declaration Under 37 C.F.R. § 1.132 of Mr. Hiroshi Iwanaga. The Examiner's attention is directed to the Declaration, in which gas barrier films were prepared and evaluated. The data shows that excellent gas barrier properties can be attained when (1) the gas barrier film has a base film containing an inorganic layered compound, (2) the glass transition temperature of the base film is 100°C or higher, and (3) the linear thermal expansion coefficient of the base film is 40 ppm/°C or lower.

As explained in his Declaration, Mr. Iwanaga prepared a polyethylene terephthalate base film containing an inorganic layered compound and a base film containing an inorganic layered compound, and evaluated the gas barrier properties (Comparative Samples C and C'). The results of the experiments show that the measured glass transition temperatures of Comparative Samples C and C' were lower than 100°C, which is outside the presently claimed range of 100°C or higher. More importantly, when the gas barrier properties of the Comparative Samples C and C' were evaluated, the excellent gas barrier properties of the present invention were not attained.

The Table at page 5 of Mr. Iwanaga's Declaration provides the experimental results for the gas barrier properties (oxygen transmission rate and water vapor transmission rate) of Comparative Samples C and C'. As Mr. Iwanaga states in the "Discussion" section on pages 5 and 6 of his Declaration, the results presented in the Table show that a base film simply having incorporated therein an inorganic layer compound or a polyethylene terephthalate base film containing an inorganic layered compound do not provide the excellent gas barrier properties of the present invention, and in fact, exhibit inferior gas barrier properties (*e.g.*, oxygen transmission rate and water vapor transmission rate) compared to the present invention.

In view of the above, Applicant respectfully submits that the cited references do not disclose, teach or suggest the present invention.

Accordingly, withdrawal of the rejections is respectfully requested.

#### **IV. Conclusion**

For the above reasons, reconsideration and allowance of claims 1-9 and 11-21 is

**AMENDMENT UNDER 37 C.F.R. § 1.111  
U.S. Application No. 10/606,236**

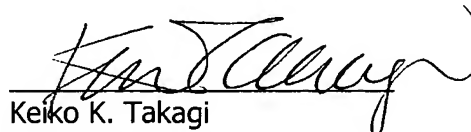
**Attorney Docket Q76184**

respectfully requested.

If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

  
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